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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of manufacturing syntactic foam including the steps of:  
providing a predetermined ratio of constituent materials including a liquid phase  
binder and microspheres that are naturally buoyant in that binder;  
5       blending the constituent materials into a mixture and placing the mixture into a  
mould;  
allowing the microspheres to float to the top of the mixture;  
draining excess liquid phase binder from the mould; and  
allowing the remaining liquid phase binder to set or cure between the  
10    microspheres.
2. A method as claimed in claim 1 wherein the microspheres are allowed to float to  
the top of the mixture until they become close packed.
3. A method as claimed in claim 2 wherein the microspheres become close packed in  
a density approaching the natural microsphere bulk density.
- 15   4. A method as claimed in either claim 2 or claim 3 wherein the step of allowing the  
microspheres to float to the top of the mixture until they become close packed is  
facilitated by selecting a liquid phase binder composition that has sufficiently low  
viscous drag characteristics, and sufficiently long curing time, to allow the microspheres  
to become close packed before the binder cures.
- 20   5. A method as claimed in claim 4 wherein the liquid phase binder composition is  
selected by adding a predetermined amount of diluent.
6. A method as claimed in claim 5 wherein the liquid phase binder includes an  
epoxy resin with hardener, and the diluent comprises acetone.
7. A method as claimed in any one of the preceding claims wherein the excess liquid  
25   phase binder is drained from the bottom of the mould.
8. A method as claimed in claim 7 when dependent upon claim 2 wherein the liquid  
phase binder is drained until the close packed microspheres reach the bottom of the  
mould.
9. A syntactic foam article comprising close packed microspheres bound together by  
30   a cured, originally liquid phase binder, manufactured by a method according to any one  
of the preceding claims.